

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
8 January 2004 (08.01.2004)

PCT

(10) International Publication Number
WO 2004/003637 A3

(51) International Patent Classification⁷: G02F 1/13357,
1/1335, G02B 5/02

(21) International Application Number:
PCT/KR2003/001231

(22) International Filing Date: 24 June 2003 (24.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10-2002-37087 28 June 2002 (28.06.2002) KR

(71) Applicant (for all designated States except US): SAM-
SUNG ELECTRONICS CO., LTD. [KR/KR]; 416, Mae-
tan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do 442-742
(KR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): LEE, Jeong-Hwan
[KR/KR]; 401-206 Jugong4danji, Maetan1-dong, Pal-
dal-gu, Suwon-si, 442-708 Gyeonggi-do (KR). LEE,
Keun-Woo [KR/KR]; 110-401 Hyundai town 1danji
Apt., Banwol-ri, Taeon-eup, Hwaseong-gun, 445-973
Gyeonggi-do (KR). PARK, Jong-Dae [KR/KR]; #474-301
Changcheon-dong, Seodaemun-gu, 120-836 Seoul (KR).
JUNG, Jae-Ho [KR/KR]; 504-905 Hyundai home town,

Galhyun-maul, #159 Shingal-ri, Giheung-eup, Yongin-si,
449-907 Gyeonggi-do (KR). LEE, Tae-Jin [KR/KR];
211-1607 Sinyeongtong Hyundai Apt., Taeon-eup,
Hwaseong-gun, 445-970 Gyeonggi-do (KR). BANG,
Chang-Young [KR/KR]; 216-902 Sumitvill Apt., 71/1
#497 Gokbanjeong-dong, Gwonseon-gu, Suwon-si,
441-400 Gyeonggi-do (KR).

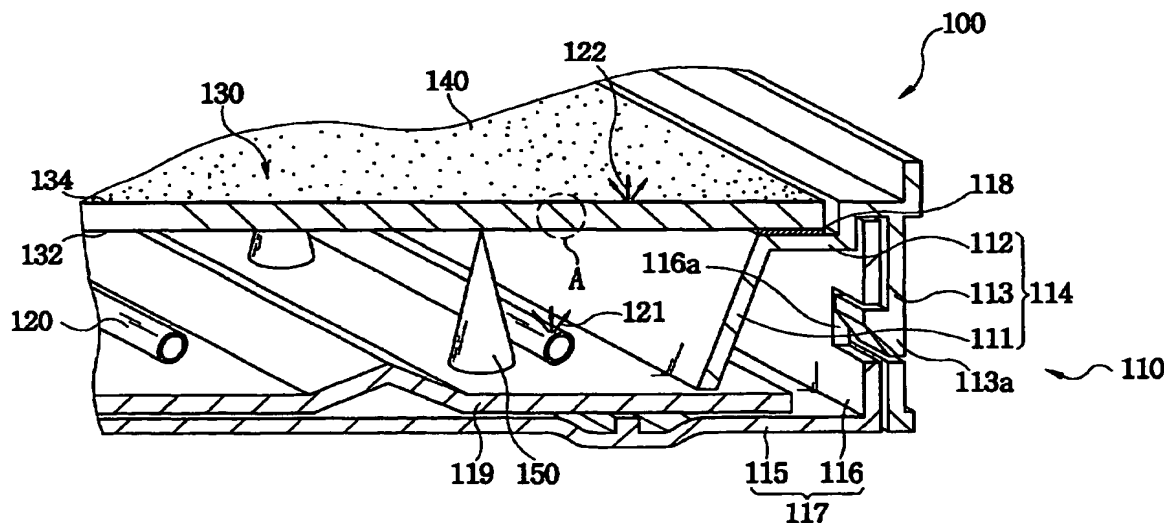
(74) Agent: PARK, Young-Woo; 5F., Seil Building, #727-13,
Yoksam-dong, Gangnam-gu, Seoul 135-921 (KR).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK,
LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,
MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE,
SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: BACK LIGHT ASSEMBLY AND LIQUID CRYSTAL DISPLAY DEVICE HAVING THE SAME



(57) Abstract: Disclosed are a back light assembly (100) for preventing discoloration and deformation caused by heat generated from a lamp, and a liquid crystal display device for displaying an enhanced image. The back light assembly (100) includes a receiving container (110), a lamp (120), a glass substrate (130) and a diffuser (140). The receiving container (110) has a receiving space. The lamp (120) for generating the light is disposed in the receiving space. The glass substrate (130) is interposed between the liquid crystal display panel and the lamp (120). The diffuser (140) diffuses the light generated by the lamp so as to unify a luminance distribution of the liquid crystal display panel. The liquid crystal display device includes the back light assembly.



Published:

— with international search report

(88) Date of publication of the international search report:

1 April 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR 03/01231-0

CLASSIFICATION OF SUBJECT MATTER

IPC⁷: G02F 1/13357, 1/1335, G02B 5/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁷: G02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5046826 A (IWAMOTO et al.) 10 September 1991 (10.09.91) <i>fig. 1,2,7,8,15; col. 4, line 58 - col. 6, line 40; col. 6, line 44 - col. 9, line 2; col. 10, lines 1-18.</i>	1,2,4,10,14,16,17
Y		3, 5-9,11,13,15,17-19
Y	US 6111699 A (IWATA et al.) 29 August 2000 (29.08.00) <i>fig. 1-4,14-16; col. 5, line 50 - col. 8, line 67; col. 9, line 18 - col. 10, line 40; col. 13, line 3-34.</i>	3,6-8,17,18
A		1,2,5,11,14
Y	US 2002/0012085 A1 (HONDA et al.) 31 January 2002 (31.01.02) <i>Fig. 1,2 10; [0031],[0032],[0037],[0038], [0041][0042].</i>	5-8,11,13,17,19
A		1-3,14

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

„A“ document defining the general state of the art which is not considered to be of particular relevance

„E“ earlier application or patent but published on or after the international filing date

„L“ document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

„O“ document referring to an oral disclosure, use, exhibition or other means

„P“ document published prior to the international filing date but later than the priority date claimed

„T“ later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

„X“ document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

„Y“ document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

„&“ document member of the same patent family

Date of the actual completion of the international search

14 October 2003 (14.10.2003)

Date of mailing of the international search report

4 November 2003 (04.11.2003)

Name and mailing address of the ISA/AT

Austrian Patent Office

Dresdner Straße 87, A-1200 Vienna

Facsimile No. 1/53424/535

Authorized officer

GRONAU E.

Telephone No. 1/53424/320

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR 03/01231-0

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	US 5394255 A (YOKOTA et al.) 28 February 1995 (28.02.95) <i>col. 4, line 55 - col. 6, line 68; col. 7, line 45 - col. 8, line 20; col. 9, line 21-36; fig. 11,18,27.</i> -----	3,9,15 1-3,7,8,10, 14,16,18

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR 03/01231-0

Patent document cited in search report			Publication date	Patent family member(s)			Publication date
US	A	20020012 085		none			
US	A	5046826	1991-09-10	EP	A	0308828	1989-03-29
				DE	T	3853242T	1995-08-03
				DE	D	3853242D	1995-04-13
				JP	A	1107236	1989-04-25
				JP	A	1078283	1989-03-23
US	A	5394255	1995-02-28	DE	T	69317133T	1998-09-03
				US	A	5764315	1998-06-09
				DE	D	69317133D	1998-04-09
				US	A	5552907	1996-09-03
				EP	A	0556606	1993-08-25
US	A	6111699	2000-08-29	US	B	6480249	2002-11-12
				US	A	2002015123	2002-02-07
				US	B	6327088	2001-12-04
				JP	A	11160505	1999-06-18